



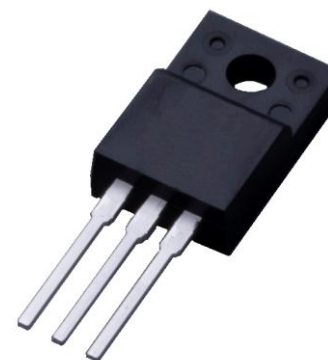
Working Together for a Greener Society

Future of Power Electronics and the Earth



100 V, 10 to 40 A High-current Schottky Diodes

FMES Series



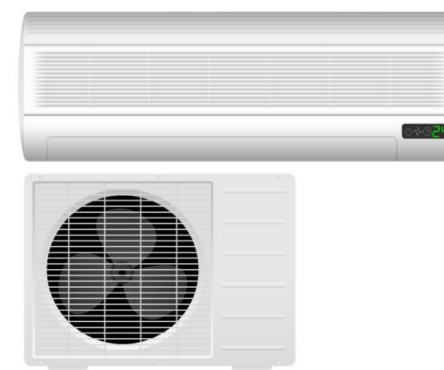
■ Overview

- High-current Schottky diodes
 V_{RM} : 100 V
 $I_{F(AV)}$: 10 A to 40 A
- Bare lead frame: Pb-free (RoHS compliant)
- The adopted trench structure leads to a chip size reduction of about 50%
→ High-current-rated devices can be supplied in TO220F package
- Low V_F characteristics achieve lower loss
- Low I_R characteristics allow a safer power supply with less thermal runaway at high temperature

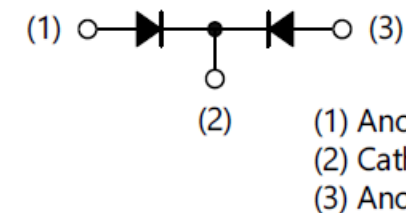
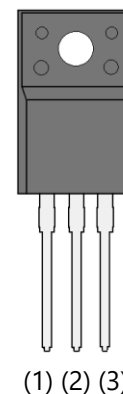
■ Applications

Rectifier circuits used in power supplies for high-current applications:

- Large home appliances (air conditioners, refrigerators)
- Audio visual equipment (TVs)
- Industrial equipment
- Adapters



TO220F-3L Package



■ Small TO220F Package

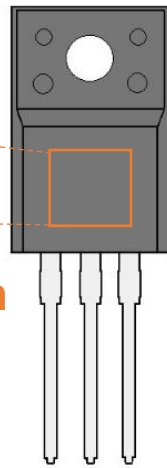
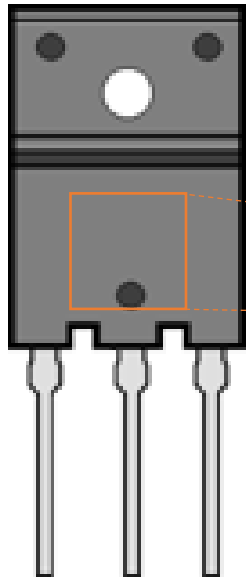
The adopted trench structure achieved a chip size reduction of about 50%.
 This enables the small TO220F package to contain high-current diodes up to 40 A, whose packaging traditionally requires TO3PF or the packages of equivalent sizes.

TO3PF Package

(H × W = 23 × 15.6 mm)

TO220F Package

(H × W = 15.8 × 10.1 mm)



≈50% Down
in Chip Size

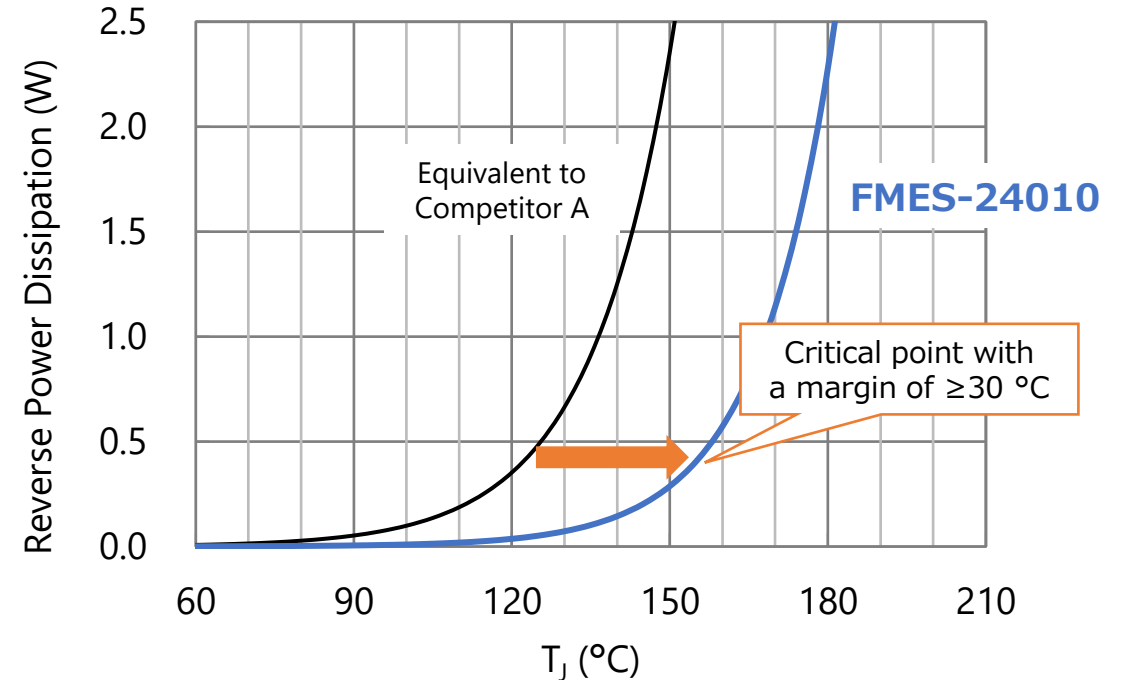
40 A devices can be supplied in TO220F

Conventional
(Planer SBD)

FMES Series
(Trench SBD)

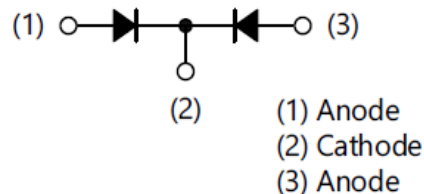
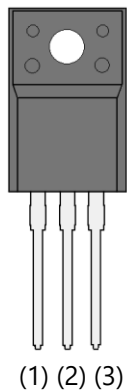
■ Critical Point of Thermal Runaway Temperature

Our FMES series brings a significant reduction in the leakage current at high temperature, $H \cdot I_R$.
 With a higher critical point of thermal runaway temperature than that of a competitor's device, even the small TO220F package can help your thermal design have sufficient margins.



■ Package

TO220F3L



■ Overview

- High-current Schottky diodes
- Bare lead frame: Pb-free (RoHS compliant)
- Trench structure
- Low leakage current
- Low forward voltage

■ Selection Guide

$T_J = 25\text{ }^\circ\text{C}$

Part Number	V_{RM}	$I_{F(AV)}$	V_F (Max.) ($I_F = I_{F(AV)}$)	I_R (Max.) ($V_R = V_{RM}$)	$H \cdot I_R$ (Max.) ($V_R = V_{RM}, T_J = 150\text{ }^\circ\text{C}$)
FMES-21010	100 V	10 A	0.85 V	35 μA	18 mA
FMES-22010	100 V	20 A	0.85 V	70 μA	35 mA
FMES-23010	100 V	30 A	0.85 V	100 μA	50 mA
FMES-24010	100 V	40 A	0.85 V	150 μA	75 mA

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